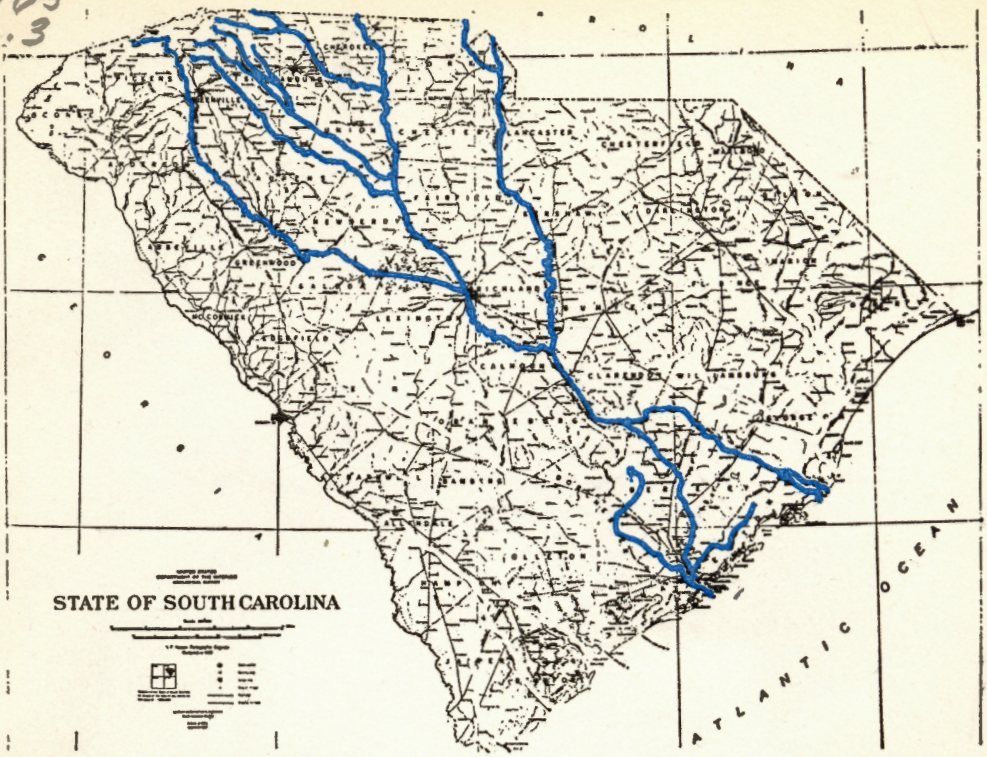

REPORT

OF

CONGAREE NAVIGATION STUDY COMMITTEE

TO THE

SOUTH CAROLINA GENERAL ASSEMBLY

COLUMBIA, S. C.

1965

Concurrent Resolution H. 2501, 1964.

LETTER OF TRANSMITTAL

Columbia, S. C.
April, 1965.

The Honorable Robert E. McNair
Governor of South Carolina
and
Members of the South Carolina General Assembly:

My dear Governor McNair and members of the General Assembly:

Included in this report of the Congaree River Navigation Study Committee is a summary of the committee's findings, a discussion of the problems involved in developing commercial navigation on the Congaree River to the Midlands, three recommendations, and a summary of the activities of the committee since its formation in 1959.

If Recommendation B is acted upon, we feel that this may be considered the final report of this committee. However, if for some reason further activities of river development cannot be turned over to a permanent state agency, then we would respectfully request that the committee be continued under different instructions in order to protect the State's interests in this valuable natural resource until such time as an appropriate state agency can be named custodian of all the water resources of South Carolina.

Respectfully submitted,

Senate Members:	House Members:
ADDISON B. CARWILE	CHARLES M. GIBSON
W. FRANK MISHOE	C. A. MITCHELL
MARSHALL B. WILLIAMS	L. R. REDFEARN

Governor's Appointees:

RUDOLPH C. BARNES
Chairman

CARLTON W. TRUAX
Secretary

W. CARL WALSH
Vice-Chairman

CONGAREE RIVER FACT SHEET

I. THE COLUMBIA TO CHARLESTON WATERWAY

A. It is approximately 169 miles by way of the Congaree River, Lake Marion, Lake Moultrie and the Cooper River from Columbia to Charleston.

1. 122 miles of this is already navigable (from Charleston to Fort Motte).

2. The upper 47 miles is inadequate for modern tugs and barges.

B. This 47 miles can be made navigable.

1. Compare the average water flow in the Congaree at Columbia with that of other navigable streams in the southeast.

   a. Congaree—At Columbia ..... 8,027 cubic ft. per Sec.
   b. Savannah—At Augusta, Ga. ...10,720 cubic ft. per Sec.
   c. Flint River—Georgia ..... 8,244 cubic ft. per Sec.
   d. Cape Fear—at Fayetteville, N. C. 4,815 cubic ft. per Sec.
   e. Tombigbee—at Tuscaloosa, Ala.. 7,656 cubic ft. per Sec.
   f. It is evident from this that there is enough water to support navigation.

2. What about the rocks in the Congaree River?
   Columbia is on the fall line. Here the granite outcroppings end. Below Columbia the bed of the river is sand and shale.

3. How do barges get through the Santee-Cooper Dams?
   There is a lock which is 180 feet long, 60 feet wide and 12 feet deep over the sill. This is large enough for all but the largest intercoastal waterway barges.

4. Why isn't the upper 47 miles navigable now if there is enough water?

   a. Fluctations in the flow. There is no control over the amount of water running by Columbia. During periods of extreme drought and when the water is not used to generate electricity at the hydro-electric facilities at Lake Murray the level of the river drops below the minimum requirements for navigation. During flood periods, the level of the river is above bank full.

   b. But in spite of this, the river has at present a rated navigable depth of 7.1 feet and is navigable by boats with this draft 75 per cent of the time. (A nine foot rated depth is

standard for the United States. The rated depth of the Mississippi and Ohio rivers and the Intercoastal Waterway is nine feet.)

c. In April of 1948, when the river was at a stage where its depth was equivalent to eight feet, Grannis, Thompson and Street Company, of Charlotte, N. C., moved 40,000 tons of granite that month from the quarries near Columbia to the Dams of the Santee-Cooper Lakes.

5. Barriers to Navigation.

a. Uncertain depth of water in upper 47 miles is the main obstacle.

b. Strawberry Landing Bridge above Charleston on the Cooper River has a horizontal clearance of only 33 feet. Modern barges are at least 35 feet wide and need at least 50 feet horizontal and vertical clearance.

c. The channel in the Cooper River and through the lakes is not marked.

II. WHY WATER TRANSPORTATION?

A. Increasing importance nationally.

a. Tombigbee River, Alabama ..... 2.1 million tons in 1948
4.9 million tons in 1957

b. Black River, Arkansas ..... 150,000 tons in 1953
(only 6½ feet deep) 210,000 tons in 1957

c. Similar comparisons could be developed for almost every navigable river in the Southeast.

B. Why this increase?

a. Today it takes half a horsepower to move a ton by water, seven horsepower to move a ton by rail and ten to move a ton by truck. Since Diesel engines are used for all three, a cost comparison would be about the same. Water transportation is cheaper, as shown by the following figures:

Air ..... 24.6 cents per ton mile
Truck ..... 6.5 cents per ton mile
Rail ..... 1.5 cents per ton mile
Pipeline .... 0.4 cents per ton mile
Barge ..... 0.3 cents per ton mile
Tanker .... 0.2 cents per ton mile

(figures taken from the Industrial College of the Armed Forces, Washington, D. C.)

b. But, water transportation is also the slowest means of transportation. However, speed is not a factor in the transportation of many commodities which are shipped in bulk quantities. Some of these are petroleum products, sand, gravel, stone, bricks, lumber, pulpwood; some agricultural commodities such as grain and soybeans.

c. Furthermore, a shipper can often save storage costs by shipping by barge because the barge serves as a floating warehouse during the time in transit.

d. A barge can carry more—1,300 tons per barge.

III. ACTIVITIES OF THE CONGAREE RIVER NAVIGATION STUDY COMMITTEE.

A. The First Year.

1. Made a feasibility study which brought out the above listed facts and recommended that efforts be made to develop navigation on the river.
2. Caused the U. S. Army Corps of Engineers to commence a comprehensive technical study of the river.
3. Sparked interest in the formation of special committees of the Columbia and Cayce-West Columbia Chambers of Commerce in river navigation.

B. Subsequent to First Year.

Since the completion of the 1960 and 1961 Reports to the General Assembly, the committee has spent a great deal of time protecting the State's interest in the river. Each of the obstacles listed hereafter has necessitated at least one trip to Washington. Most of these have been privately financed at no expense to the State. The committee has also kept in touch with the National Congress of Rivers and Harbors, a non-governmental agency which makes recommendations to the Congress on worthwhile river development projects.

IV. OBSTACLES:

Four classes of obstacles have been faced by the committee: Bridges, Timber, Fish and a Park proposal.

A. BRIDGES: Twice during the study period efforts have been made to construct bridges across the Columbia to Charleston

waterway which would have a vertical elevation below minimum requirements for a navigable stream.

1. The first of these was a plan to build a fixed span railroad bridge with a vertical clearance of only 16.5 feet at Remini.
   a. This would have seriously retarded any efforts to make the river navigable since river transportation requires a minimum of 50 feet.
   b. After a careful study, contacts with shippers and barge operators throughout the Southeast, conferences with railroad officials, and two trips to Washington, the committee voted to oppose the construction of the bridge.
   c. As a result of this opposition, the bridge was not built.
2. The second was a request by the South Carolina Highway Department to build twin bridges with an elevation of only 35 feet across Lake Marion for Interstate Highway 95. The committee felt this would have been a death blow to navigation.
   a. Members of the committee had conferences with the Governor, the Mayors of both Columbia and Charleston and Senators of several counties involved, and also made a trip to Washington to see Congressman Mendel Rivers.
   b. With the agreement of Chief Highway Commissioner Pearman, the committee was successful in retaining the 50 foot minimum required of all other bridges on the waterway.

B. TIMBER: Owners of land in the Congaree Swamp and timber interests in the State expressed fear that the Buckingham Landing Dam proposal would be revived with its plan to flood valuable hardwood timber lands in the Congaree Swamp. Working with the U. S. Army Corps of Engineers, the committee was able to assure the timber interests that Buckingham Landing Dam was not considered economically feasible and that the swamplands would not be affected by the proposed navigation project.

C. FISH. The South Carolina Wildlife Resources Commission published a report that navigation on the Congaree would result in the destruction of striped bass fishing in the Santee-Cooper Lakes. This opinion was based on the fact that these valuable sport fish preferred the Congaree River for spawning and that the low head locks and dams proposed by the U. S. engineers to make the river navigable would not permit the fish to go

upstream to spawn and would disrupt the natural flotation needed for the eggs to hatch.

Realizing this problem, the Congaree River Study Committee, members of the Richland County Delegation, Columbia City officials, the Columbia Chamber of Commerce president and others went to Washington to enlist the aid of our United States Senators, who persuaded the Assistant Secretary of the Interior to make a detailed study of the spawning of the striped bass in order to find a way to protect the striped bass and allow navigation at the same time.

The Army Engineers were asked to and did revise their study to include features which would protect the striped bass.

D. THE NATIONAL PARK SERVICE advanced a plan to make a National Monument of 20,000 acres of Congaree Swamp. The proposed National Monument would involve both banks of the Congaree River, and the report stated that navigation of this river would interfere with the park.

The committee felt that a Park which included both banks of the river would seriously impair any opportunity to develop commercial navigation on the river. Timber interests also opposed the Park plan because it would take over thousands of acres of valuable timberlands. The National Park Service is giving the matter further study and the committee is satisfied that there is no substantial conflict between the two projects.

E. OTHER OPPOSITION: Private power companies, while not opposing navigation, have been interested in the committee's activities and in the U. S. Army Corps of Engineers' study because such projects often result in proposals to build hydroelectric dams for cooperatives. The committee has assured the private power companies that it has no interest in such developments, even going so far as to make a trip to Washington to ask the Corps of Engineers to limit the study to navigation.

V. ACTIVITIES DURING 1964:

1. Committee members, at no expense to the State, made trips to Washington, Charleston, New Orleans and Atlanta during 1964 in furtherance of the project.
2. The U. S. Army Corps of Engineers continued their study in close cooperation with the Congaree River Study Committee and other officials of the State.

VI. ACHIEVEMENTS:

A. Carolina Eastman.

1. Tennessee Eastman Corporation purchased 2,000 acres of land on the Congaree River in Lexington and Calhoun Counties.

2. Mr. Jim Ellis, vice-president of the company, advised the Congaree Study Committee that navigation on the river was the first thing to interest him in locating a plant in South Carolina. When the decision to locate in this State was made, Mr. Ellis said that Congaree navigation played a strategic part in their plans.

VII. SUPPORT:

Throughout the study period of six years, the project has received the support of the Greater Columbia Chamber of Commerce, the West Columbia-Cayce Chamber of Commerce, officials of the City of Columbia. the entire South Carolina Congressional Delegation, the Delegations from Richland and Lexington Counties, the State Development Board, the Columbia and Richland County Industrial Commission, the State Ports Authority, the South Carolina Public Service Authority and many others. Recently, because of the possibility that river navigation might be tied in with much needed improvements in Charleston harbor, City officials in Charleston have shown an increasing interest in the project.

VIII. PROBLEMS:

The solving of some problems have created others. Constructing movable dams to permit fish to swim upstream to spawn; protecting the hardwoods from possible damage by changes in the water level due to construction on the river; and enlarging the locks at Pinopolis to accommodate modern "jumbo" barges have substantially added to the cost of the project and about doubled the expected investment.

Further, certain limitations placed on the Corps of Engineers at the request of the committee, have reduced the potential benefits. For example, the committee has asked that the Corps of Engineers not consider hydro-electric development of the river, which, if added, might increase the benefits of river development and has emphasized that the committee would not be interested in navigation if it would require high dams to develop an adequate channel.

In order to justify the development of a river, the Corps of Engineers must have a one-to-one ratio between cost and benefits, with the benefits being amortized over a "life period" of the project. It now appears that, unless adjustments can be made, the ratio will be about .6- to -1 because of the added costs and limited benefits.

IX. SOLUTIONS:

Several things should be considered in attempting to arrive at a solution of this problem:

1. Seek and develop new river-using industries such as Carolina Eastman, Gulf Oil and American Cyanamid which already own land on the river and have shown an interest in its development.
2. Seek ways of bringing the ratio in balance by either finding reduced methods of developing the river or increasing the benefits.
   a. Find an alternative method for making the river's upper 47 miles navigable.
   b. Find alternate ways to satisfy fish and timber interests.
   c. Ask the research departments of our State Universities to make further studies and suggest ways and means of bringing the ratio in balance.
3. Propose other uses for the lower portion of the waterway so that costs for the benefits derived therefrom can be charged to other than navigation, such as:
   a. Storing of naval vessels in the fresh waters of the Cooper River or Lake Moultrie (benefit to Naval Defense);
   b. Decreasing the silting problem in Charleston Harbor by the deepening and straightening of the Cooper River (benefit to Charleston Harbor); and,
   c. Lessening of the pollution in Charleston Harbor by continuing the discharge of substantial amounts of fresh water by way of the Cooper River (benefit to United States Public Health).

   This could substantially reduce the portion of the cost charged to navigation and, perhaps, bring the ratio within the required 1-to-1 figure.

X. RECOMMENDATIONS:

The committee recommends:

A. That those agencies of the state government seeking the development of the state's resources and industries, vigorously seek additional river-using enterprises which would add to the benefit side of the ratio.

B. That a permanent Water Resources Commission be established and that part of its responsibility be to protect the state's interests on navigable streams, and that it be charged with developing inland ports on the Congaree, Wateree, Pee Dee and Savannah Rivers, whenever, in the opinion of the U. S. Army Corps of Engineers, the advantages of such navigation warrant the expenditure of the funds necessary for their development as navigable streams.

C. That until such a commission be established, this committee be continued to coordinate all activities concerning the Congaree River.